

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Problem Image Mailbox.**

PATENT SPECIFICATION



Convention Date (United States of America): June 28, 1940. **549,053**

Application Date (In United Kingdom): May 1, 1941. No. 5675/41.

Complete Specification Accepted: Nov. 4, 1942.

COMPLETE SPECIFICATION

Improved Tampon Applicator

We, JOHNSON & JOHNSON (GT. BRITAIN) LIMITED, a company organised under the laws of Great Britain, of Slough, Buckinghamshire, assignees of LEWIS FRANKLIN BONHAM, a citizen of the United States of America, of Building 6a, Meadowbrook Village, Plainfield, New Jersey, United States of America, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to an improved applicator adapted to contain and provide for the insertion of a tampon into a body cavity.

It is an object of this invention to provide an improved, sanitary, single-use tampon applicator, which may also be used as a container and which facilitates insertion of a tampon into the vagina or other body cavity without injury or discomfort and without the user's hands touching either the tampon or the body.

The applicator according to the invention comprises a paper tube adapted to hold a tampon in one end thereof, the tube being crimped at its other end to provide a restricted opening, and a plunger of substantially less diameter than the tube projecting into the tube through the restricted opening, the plunger being guided by the walls of the restricted opening for sliding movement within the tube whereby a tampon positioned in the tube may be expelled therefrom by manipulation of the plunger.

The accompanying drawings illustrate the following description of the preferred form of the invention.

Figure 1 is a longitudinal section taken through the centre of an applicator and illustrating a tampon positioned in the applicator prior to expulsion and

Figure 2 is a similar view illustrating the tampon expelled from the applicator.

Referring to the drawings, the applicator of this invention is composed of a tube or container 1 formed of paper such as thin cardboard. Whilst being sufficiently rigid the tube is safe and non-injurious in use as distinguished from metals, glass, and similar substances and is particularly suitable for single-use applicators, being inexpensive. The tube is cylindrical in

[Price 1/-]

cross section, of proper diameter snugly to receive and frictionally hold a tampon 3, and is approximately twice the length of the tampon or of suitable length to permit ready manipulation of the applicator without the user's fingers contacting the body, and becoming soiled and without the tampon being engaged and becoming unsterile. The discharge end of the tube is unrestricted, i.e. of the full diameter of the tube to permit free discharge of the tampon, whereas the other end of the tube is crimped as at 5 to form a restricted opening of proper diameter slidably to receive and guide a tubular plunger 7.

Plunger 7 is of considerably less diameter than the tube 1 but of sufficient diameter to provide necessary rigidity to the plunger and to receive the withdrawal cord of the tampon, which cord also serves to guide the inner end of the plunger. The plunger 7 is preferably also formed of paper such as thin cardboard and is of approximately the same length of tube 1, i.e. sufficiently long to expel the tampon from the tube. Both ends of the plunger 7 are headed or rolled to provide beads or flanges 9 of somewhat greater diameter than that of the restricted opening in the one end of tube 1. The flange 9 on the inner end of the plunger acting in co-operation with the restricted opening formed at 5 interlocks the plunger to the tube whereby withdrawal of one of the two members form the vagina or other body cavity also will cause removal of the other member. Flanges 9 also ensure that the two elements will not become disengaged during packaging and shipping and eliminate the necessity of any assembly on the part of the user prior to actual use. The tube and plunger are assembled in the first instance by forcing the plunger into and through the restricted end 5 of the tube from the restricted end. The formation of the crimped end 5 and the character of the material permits this being done but prevents subsequent separation of the two elements unless separation is deliberately forced.

Flanges 9 also serve two other functions in that the inner flange 9 provides a greater contact area of the plunger against the tampon and therefore reduces the ten-

dency to mutilate the tampon when being expelled. Similarly, flange 9 upon the outer end of the plunger which is engaged by the finger of the user, provides a more comfortable contact end for the user.

In use, the applicator with a tampon therein as shown in figure 1 is inserted into a body cavity such as the vagina for a short distance to a point beyond the sphincter muscle after which the plunger 7 is pushed inwardly with respect to the tube 1 thus expelling the tampon into the vaginal cavity. After the tampon is free from the containing tube 1 the tube and plunger may be removed by withdrawing, it being only necessary to withdraw either the plunger or the tube, i.e. it is not necessary for the user to grasp both the tube and the plunger.

Forming the plunger substantially smaller than the containing tube not only eliminates any friction or binding between the tube and plunger, thus making insertion of the tampon easier, but also eliminates any possibility of the delicate side walls or tissues of the vagina or other cavity being pinched or torn by being caught between the sides of the tube and plunger and tube.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A tampon applicator comprising a paper tube adapted to hold a tampon in one end thereof, the tube being crimped at its other end to provide a restricted opening, and a plunger of substantially less diameter than the tube projecting into the tube through the restricted opening, the plunger being guided by the walls of the restricted opening for sliding movement within the tube whereby a tampon positioned in the tube may be expelled therefrom by manipulation of the plunger.

2. A tampon applicator as claimed in claim 1 in which the plunger is a paper tube.

3. A tampon applicator as claimed in claim 1 or 2 in which the plunger has a flange upon the end within the tube, the flange being of greater diameter than the restricted opening.

4. A tampon applicator as claimed in claim 1, 2 or 3 in which the plunger has a flange upon the end outside the tube, the flange being of greater diameter than the restricted opening.

5. A tampon applicator substantially as described and as shown in the accompanying drawings.

Dated this first day of May, 1941.

CARPMAELS & RANSFORD,

Agents for the Applicants.

24, Southampton Buildings,
London, W.C.2.

[This Drawing is a reproduction of the Original on a reduced scale.]

